ABSTRACT

The invention provides new urothelial cell specific transcriptional regulatory sequences derived from human uroplakin II (*hUPII*), as well as polynucleotide constructs such as adenoviral vectors and methods of using *hUPII*-derived TREs. Additionally, the invention provides adenoviral vectors comprising a gene, preferably an adenovirus gene, under transcriptional control of a urothelial cell-specific transcriptional regulatory element (TRE). These vectors display urothelial cell-specific cytotoxicity, which is especially useful in the context of bladder cancer, in which destruction of these cells is desirable. The invention further provides compositions and host cells comprising the vectors, as well as method of using the adenoviral vectors.